

(E74-10375) THE HYDROLOGY OF PREHISTORIC  
FARMING SYSTEMS IN A CENTRAL ARIZONA  
ECOTONE Quarterly Report, 1 Jan. - 31  
Mar. 1974 (Prescott College, Ariz.) 5 p  
HC \$4.00

N74-18984

Unclas  
00375

CSCL 08H G3/13

QUARTERLY REPORT

Skylab EREP Project 9670

NAS 9-13342

THE HYDROLOGY OF PREHISTORIC FARMING  
SYSTEMS IN A CENTRAL ARIZONA ECOTONE

Principle Investigator: George J. Gumerman  
Prescott College  
Prescott, Arizona 86301

Date: March 25, 1974

"Made available under NASA sponsorship  
in the interest of early and wide dis-  
semination of Earth Resources Survey  
Program information and without liability  
for any use made thereof."

**E7.4-10375**

CR-137072

- a. The Hydrology of Prehistoric Farming Systems in a  
Central Arizona Ecotone.
- b. Skylab EREP Project 9670
- c. January 1 through March 31, 1974
- d. Contract Number NAS 9-13342
- e. PI Management Office, NASA Johnson Space Center
- f. Martin Miller, TF6
- g. Principle Investigator: George J. Gumerman  
Prescott College  
Prescott, Arizona 86301
- h. Quarterly Report

;

-/-

The following statement is a quarterly report on EREP Project 9670, contract number NAS 9-13342, entitled "The Hydrology of Prehistoric Farming Systems in a Central Arizona Ecotone," for the quarter ending March 31, 1974. A Quarterly Financial Report accompanies this statement.

In our Milestone Report we suggested that the major items to be accomplished during this reporting period would include the following:

1. The completion of the ground truth operations;
2. The beginning of intensive laboratory analysis, specifically:
  - a. of archaeological materials retrieved during ground truth operations;
  - b. the inventorying of biological specimens and completion of vegetation community maps;
  - c. the completion of drainage pattern maps.
3. Intensive analysis of the Skylab photographic coverage received to date which includes:

Skylab II: S190A  
S192

Skylab III: S190A  
S190B      transparencies only  
S192

Additionally, it was suggested that small aircraft, low-altitude overflights of the test area would be undertaken. This was as a supportive device for the hydrological aspect of the project.

As noted in the quarterly report for the period ending

December 31, 1973, the hydrologists had encountered rather limiting problems in their ground truth reconnaissance due to the lack of rain in the test area. Regrettably, this problem has not been substantially rectified in the last three months. However, by this juncture in the project, they are in the process of an analysis of U-2 overflight data to be used in comparison with Skylab photographs. Limited mapping of secondary drainages has been accomplished and this effort is continuing on into the next reporting period.

In terms of the biologists and archaeologists, all goals set have been accomplished. The biologists have completed the plant inventory of the test area, and are in the process of completing the vegetation maps of the principle biological zones within the test area. As mentioned in the last quarterly report, Dr. R. Roy Johnson's photographic analysis is not yet completed, but will be included in the final report.

The archaeologists finished test excavations at selected sites in late January. Additionally, several major agricultural/water-control systems were cleared, mapped and photographed. Pollen and soil samples were taken in these systems and are now being processed.

Laboratory work is now progressing at a steady pace in the biology and archaeology. The archaeological materials have been catalogued, with specialized analysis now being commenced. Obsidian retrieved from several sites, either through excavation or by survey, has been sent to the Obsidian Hydration Laboratory

at UCLA, where dating of these materials will be conducted. Faunal bone materials have been separated and are currently being analyzed by Drs. Lyndon Hargrave and Charles Douglas. As regards this latter topic, it is hoped that, especially with materials retrieved in excavations, it will give us a more complete picture of the prehistoric environmental situation in the test area.

At this point the project is hampered with regards to the fulfillment of contractual obligations in two principle ways. Supporting photographic materials, such as U-2 overflight photographs, have been late in arriving, thereby causing major time delays in the comparative analysis. Secondly, the efforts of the hydrologists, because of the limiting factor mentioned previously, have failed to supply the biologists and archaeologists with much needed data. In this latter instance, but pertinent to the first point also, late in this reporting period several U-2 photographs were received, which may answer several pertinent questions. As noted in the hydrology section, analysis is now being made of these photographs and results should be forthcoming in the next report.

In general, our summary outlook for the remaining quarter is not significantly changed from that contained in our Milestone Report. The major problems being encountered at this time are those already discussed previously in this report. However, most areas of concern should have some solution offered for them by the end of our academic year.